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# NATIONAL ENERGY BOARD REASONS FOR DECISION

In the Matter of an Application under  
the National Energy Board Act

of

**TRANSCANADA PIPELINES LIMITED**

**JUNE 1980**

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REASONS FOR DECISION


In the Matter of an Application under  
the National Energy Board Act

of

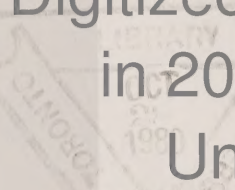
TRANSCANADA PIPELINES LIMITED

June 1980

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(i)

NATIONAL ENERGY BOARD

IN THE MATTER OF the National Energy Board Act  
and the Regulations made thereunder;

AND IN THE MATTER OF an application made by  
TransCanada PipeLines Limited for a Certificate  
of Public Convenience and Necessity under Part III  
of the said Act, filed with the Board under  
File Number: 1555-T1-94.

HEARD at Ottawa, Ontario on  
9, 10, 11, 14, 15, 16, 21, 22 and 23 April 1980

BEFORE:

C.G. Edge	)	Presiding Member
J.R. Jenkins	)	Member
J.L. Trudel	)	Member

APPEARANCES:

C.L. Campbell, Q.C.	)	TransCanada PipeLines Limited
L.T. Forbes, Q.C.	)	
G. McGuire	)	
D.B. Macnamara	)	Canadian Petroleum Association
C.K. Yates	)	Independent Petroleum Association of Canada
B.A. Carroll	)	Industrial Gas Users Association
J. Hopwood, Q.C.	)	Alberta Gas Trunk Line Company Limited
G.D. Nichols	)	Consolidated Natural Gas Limited
G.H. Robichon	)	Dome Petroleum Limited
Y. Brisson	)	Gaz Inter-Cité Québec Inc.
M.M. Peterson	)	Gaz Métropolitain, inc.
A.R. Kainz	)	Great Lakes Gas Transmisison Company
J. H. Smellie	)	Natural Gas Pipeline Company of America



(ii)

J.H. Farrell	)	Niagara Gas Transmission Limited
M.J. Zukowski	)	Norcen Energy Resources Limited
P. F. Scully	)	Northern and Central Gas Corporation Limited
D.G. Hart	)	ProGas Limited
J. Hopwood, Q.C.	)	Q & M Pipe Lines Ltd.
J.H. Farrell	)	The Consumers' Gas Company
A. Butler	)	Union Gas Limited
I.W.M. Hendry	)	Westinghouse Canada
N.D. Shende	)	Attorney General of Manitoba
J.M. Johnson	)	Minister of Energy for Ontario
J.P. Chartrand	)	Procureur Général du Québec
S.K. Fraser	)	National Energy Board
A.R. Macdonald	)	

## TABLE OF CONTENTS

	<u>Page</u>
RECITAL & APPEARANCES	(i)
TABLE OF CONTENTS	(iii)
ABBREVIATIONS	(iv)
CHAPTER	
1 The Application	1-1
2 Facilities Required to Meet Growth on the Montreal Line	2-1
3 Pipeline Facilities Related to the Recently Authorized Exports	3-1
- Engineering Matters	3-1
Western and Central Sections	3-2
The Winter Loop	3-3
Views of the Board	3-4
- Right-of-Way Matters	3-5
- Environmental Matters	3-6
Views of the Board	3-8
4 Fuel Saving Compressors	4-1
5 Canadian Content	5-1
6 Disposition	6-1
APPENDICES	
1 Map(s)	
2 Terms and Conditions	

ABBREVIATIONS

"ACQ"	- Annual Contract Quantity
"Act"	- National Energy Board Act
"CD"	- Contract Demand
"Consolidated"	- Consolidated Natural Gas Limited
"Consumers'"	- The Consumers' Gas Company
"dBA"	- decibels measured using the A weighted sound scale
"Gaz Métro"	- Gaz Métropolitain, inc.
"Great Lakes"	- Great Lakes Gas Transmission Company
"IPAC"	- Independent Petroleum Association of Canada
"ISO"	- International Standards Organization
"km"	- kilometre
"MLV"	- Mainline Valve
"mm"	- millimetre
"MW"	- megawatt
"the NEB" or "the Board"	- National Energy Board
"Niagara"	- Niagara Gas Transmission Limited
"Northern and Central"	- Northern and Central Gas Corporation Limited
"ProGas"	- ProGas Limited
"Sulpetro"	- Sulpetro Limited
"TransCanada", "TCPL" or "the Applicant"	- TransCanada PipeLines Limited
"10 <sup>3</sup> m <sup>3</sup> /d"	- Thousand cubic metres per day
"10 <sup>9</sup> m <sup>3</sup> /d"	- Billion cubic metres per day



CHAPTER 1THE APPLICATION

On 8 February 1980, TransCanada submitted an application for a certificate of public convenience and necessity under Part III of the Act.

The certificate, if granted, would authorize TransCanada to construct and operate additional facilities, identified by the Applicant as follows:

- (1) fuel saving compression pipeline facilities;
- (2) Canadian growth pipeline facilities; and
- (3) export pipeline facilities.

The fuel saving compression pipeline facilities applied for (hereinafter referred to as "the fuel saving compressors") consist of five 21-MW compressor units, which would be installed at Stations 2, 5, 9, 17 and 30, located in the Provinces of Saskatchewan and Manitoba. In its application, TransCanada stated that the installation of the new compressor units would reduce the amount of fuel used on its system and that the new units would be economically feasible at the anticipated cost of fuel gas in 1981. The capital cost of the new units was estimated to be approximately \$50.5 million (in 1980 dollars).

The Canadian growth pipeline facilities applied for (hereinafter referred to as "the facilities required to meet growth on the Montreal line") consist of two 3-MW compressor units, which would be installed at Stations 134 and 139 at Bowmanville and Belleville, Ontario, respectively. The Applicant stated that the installation of these two units would enable

TransCanada to meet the increasing requirements of its customers on the Montreal line. The capital cost of the two units was estimated to be approximately \$5 million (in 1980 dollars).

The export pipeline facilities applied for (hereinafter referred to as "the pipeline facilities related to the recently authorized exports") consist of 268 km of 1219-mm loop in Saskatchewan and Manitoba and 207 km of 1067-mm loop in Manitoba and Ontario. These facilities would also include the installation of six compressor units and the relocation of two portable compressor units in Ontario. The application states that these facilities would be required because of the need to transport volumes of gas for export to the United States authorized by licences recently issued to Consolidated, Niagara, ProGas and Sulpetro (hereinafter referred to as "the recently authorized exports"). The Applicant conditioned this portion of the application to the effect that TransCanada would not begin construction of the export pipeline facilities until the Applicant had satisfied the Board that all United States regulatory approvals required for the importation of the recently authorized exports into the United States had been received. If only part of the recently authorized exports were approved for import, TransCanada would not begin construction until it had demonstrated to the Board's satisfaction the lesser amount of facilities required to transport that part of the recently authorized exports which did receive all necessary United States approvals. The capital cost of the additional facilities was estimated to be approximately \$313 million (in 1980 dollars).



CHAPTER 2FACILITIES REQUIRED TO MEET GROWTH ON THE MONTREAL LINE

TransCanada's application to install two 3-MW compressor units at Stations 134 and 139 was based on the anticipated growth of markets served by the Montreal line. Although Certificate of Public Convenience and Necessity No. GC-65 has been issued to TCPL in respect of additional pipeline facilities from Boisbriand Junction to Lévis-Lauzon in the Province of Quebec, TransCanada assumed the extension of natural gas service only as far as Boisbriand for its forecast of 1980/81 Canadian sales.

The expected increase in TCPL's 1980/81 deliveries from the Montreal line was largely attributable to an increase in projected winter maximum daily sales to Gaz Métro, Northern and Central, Consumers', Niagara, Vermont Gas Systems Inc. and the Kingston Public Utilities Commission. In particular, TransCanada testified that additional sales to Gaz Métro were expected to amount to  $850 \times 10^3 \text{ m}^3/\text{d}$ , this increase being contingent upon Gaz Métro's receiving a development rate and upon facilities for deliveries to Boisbriand being in place. In the absence of a development rate, the Applicant expected Gaz Métro's winter maximum daily demand to increase by only  $550 \times 10^3 \text{ m}^3$ .

TransCanada stated that the increased deliveries from the Montreal line would require the addition of at least one unit at Station 134, but that if Gaz Métro did not take at least 550  $10^3 \text{m}^3/\text{d}$  of additional CD service, the proposed unit at Station 139 would not be constructed. Gaz Métro concurred with TCPL's forecast and supported the installation of both units.

No fully executed contract for the sale of additional gas to Gaz Métro was presented in evidence at the hearing. The Board has received a contract dated 28 February 1980 between TCPL and Gaz Métro for 850  $10^3 \text{m}^3/\text{d}$ , based on a development rate. This contract contains a provision that, in the event the NEB's forthcoming TCPL rate decision adversely affects any portion of the provisions of the contract, either party may terminate the agreement.

The Board finds TransCanada's projected increased deliveries from the Montreal line in 1980/81 to be reasonable and is satisfied that the Applicant has sufficient supply to meet these requirements.

Moreover, the Board agrees that the Applicant requires additional facilities on the Montreal line to meet its forecast growth in this area. In particular, the Board is satisfied that the addition of a 3-MW unit at Station 134, as proposed by TCPL, is required.



With regard to the addition of a unit at Station 139, the Board is of the view that this installation should be made only if Gaz Métro and TransCanada execute a contract for at least  $550 \times 10^3 \text{ m}^3/\text{d}$  of additional CD service at rates approved by the Board. Any certificate issued to TCPL with respect to the addition of a unit at Station 139 would contain a condition to this effect.

The Board is satisfied with TransCanada's basic design and its cost estimates and is confident that the facilities can be financed.

The main environmental issue relating to the proposed addition of units at Stations 134 and 139 was the noise level. TransCanada testified that its normal design standard for noise emission levels at compressor stations is 52 dBA at 100 metres; however, for Stations 134 and 139, TransCanada would design for a more stringent noise emission level of 48 dBA at 70 metres.

The Board accepts TransCanada's design standards and feels that these noise emission standards would not result in an adverse impact on the surrounding environment. The Board, however, would require the Applicant to conduct a noise emission survey at each compressor station to confirm that the noise emission level meets the design standards set by TransCanada and to report the results of these surveys to the Board.





CHAPTER 3

PIPELINE FACILITIES RELATED TO THE RECENTLY  
AUTHORIZED EXPORTS

ENGINEERING MATTERS

In its application, TransCanada stated that it required certain facilities to transport the recently authorized exports in the event that all United States regulatory approvals for the importation of these volumes were received.

Under TransCanada's proposal, the Sulpetro and Niagara exports would be transported through the Central Section of the TCPL system for delivery at the Niagara River and St. Lawrence meter stations, respectively. The Consolidated and ProGas volumes would be delivered by TransCanada at Emerson, Manitoba, and would be transported through the Great Lakes system for delivery at Carlton and Farwell. In order to accommodate the ProGas and Consolidated exports, volumes of gas destined for eastern Canadian markets, normally transported through the Great Lakes system, would be reallocated and carried through TransCanada's Central Section. Additional facilities would, therefore, be required on TransCanada's system east of Emerson, in order to maintain deliveries to Eastern Canada.

The imminent requirement to move additional export volumes, commencing perhaps as early as November 1980, was a

principal factor influencing the form of the applied-for facilities. To meet this commencement date, TransCanada proposed a combination of pipeline and compression additions which was indicated to be both practical to construct and consistent with the results of economic studies of long- and short-term expansion.

The facilities applied for included approximately 268 km of 1219-mm pipeline loop in Saskatchewan and Manitoba, 207 km of 1067-mm pipeline loop in Manitoba and Ontario, the installation of three 21-MW compressor units at Stations 49, 58 and 80, two 8-MW compressor units at Stations 105 and 116, as well as a new 21-MW compressor unit at new Station 69, all in Ontario. Two existing 5.7-MW portable units would be moved to new locations at Stations 119 and 127. All this work would be carried out between the summer of 1980 and the spring of 1981, with all pipeline construction taking place during the summer months except for 85.4 km of pipeline loop in Ontario (hereinafter referred to as "the winter loop"). TransCanada stated that summer construction was impractical in these four sections of the pipeline because of the marshy terrain.

#### Western and Central Sections

TransCanada's application contained the results of economic comparisons in support of the selection of the 1219-mm loop and the 1067-mm loop applied for.



TransCanada filed additional evidence which summarized portions of a ten-year expansion study to select the optimum facilities additions for the Central Section. The study included the examination of several compressor unit sizes ranging from 8 MW to 29 MW. This study was based on the assumption that, in adjusting to the realities of higher fuel prices, approximately every second compressor station would be idled and that new stations would be constructed at MLV 44 and MLV 53. The results of this study tended to support TCPL's contention that the size of the units chosen was economically justified, although the difference in relation to other compressor units was relatively small.

#### The Winter Loop

There was an indication that due to the anticipated late completion of the proposed compressor facilities, the full 1980/81 winter deliveries could not be made. TransCanada assumed that Canadian ACQ deliveries would absorb the assumed shortfall of  $0.22 \times 10^9 \text{ m}^3$  which would be made up during the summer months. This volume represents 10 percent of the winter season ACQ deliveries, a shortfall permitted under TransCanada's ACQ contracts.

TransCanada filed evidence showing the capability of the Central Section without the winter loop, for the 1980/81 summer average day. This calculation indicated that the TransCanada system would have a slight excess capability under normal circumstances without the winter loop.

TransCanada stated that, since the summer season excess capability would be only  $0.01 \times 10^9 \text{m}^3$ , surplus capability would not be available to deliver the ACQ shortfall of  $0.22 \times 10^9 \text{m}^3$  per year which TransCanada indicated might occur during the winter.

#### Views of the Board

The Board is of the view that the winter loop will be needed to make up ACQ underdeliveries which may occur in the winter of 1980/81 and can be used to meet growth in Canadian markets.

The Board is satisfied that, in the event all necessary United States authorizations for the importation of the recently authorized exports are received, additional capacity will be required on the Western and Central Sections of TransCanada's system. The Board finds that the facilities for which TransCanada has applied would be adequate to provide the capacity required to serve the export markets. The Board also finds that the cost estimates of the Applicant are reasonable and that the facilities applied for can be financed.

The Board is satisfied with TCPL's preliminary pipeline design with respect to selection of materials. Should a certificate be issued to TransCanada, the Board would require

TCPL to submit to the Board for approval welding procedures and final specifications for line pipe, pipeline components and pipe coating. As well, TCPL would be required to submit for approval a list of standards and company engineering specifications proposed to be used on this project.

Any certificate granted to TransCanada would contain a condition that, prior to commencement of construction of the pipeline facilities related to the recently authorized exports, TransCanada would be required to demonstrate to the Board that all regulatory approvals, on terms satisfactory to the Board, had been obtained for the importation of the total volumes recently authorized by the Board for export to the United States pursuant to the four licences issued to Niagara, ProGas, Sulpetro and Consolidated. Should import authorization be received for volumes less than the total volumes authorized by the Board under the four licences, the Board would require a re-examination of the size, design and location of the proposed export pipeline facilities.

#### RIGHT-OF-WAY MATTERS

TransCanada indicated that it planned to make use of its existing rights-of-way where possible and to acquire additional land along those loop sections where the existing right-of-way could not accommodate an additional line of pipe or where additional land was required for compressor station purposes. The Applicant also stated that temporary working space would be required in some areas.



The Board is satisfied with TCPL's plans with respect to right-of-way matters. The Board accepts TransCanada's position that it can obtain all lands required for additional rights-of-way and, where necessary, lands required for compressor station purposes.

The Board notes the Applicants's statement that it is unaware of any active mining areas along its proposed route. Nevertheless, the right-of-way may be affected by mining claims. In the event a certificate were issued, the Board would require, under Section 35 of the Act, that TransCanada indicate on the plans, profiles and books of reference, filed pursuant to Section 29, the locations of any mining claims along the proposed route of the pipeline.

#### ENVIRONMENTAL MATTERS

TransCanada stated that it accepted, in principle, the recommendations for environmental protection contained in the environmental impact statements and reports submitted. If actual conditions encountered were to differ from those contemplated or, should the actual construction schedule prove not to be compatible with any of the recommendations, TransCanada would carry out further environmental assessments, and appropriate mitigative measures would be identified. The Applicant gave evidence on its plans for environmental inspection, restoration and monitoring with respect to the proposed facilities.

The maintenance of agricultural productivity, the stripping of topsoil, the removal of rocks and the disposal of subsoil were major concerns in Manitoba and Saskatchewan. The Applicant described the methods by which these concerns would be mitigated.

TransCanada identified areas in Saskatchewan and Manitoba where withdrawal of water for hydrostatic testing could result in water shortages and associated problems. The Applicant is currently conducting a study of potential water sources and undertook to provide the results of its studies, when available.

TransCanada undertook to provide, after having carried out additional comprehensive environmental and geotechnical studies, detailed design drawings of 17 sensitive stream crossings. Sensitive stream crossings would not be constructed during a time period critical to fish. However, if this were not possible, appropriate mitigative measures would be adopted.

The Applicant stated that in the Wanogu Lake area in Ontario, it was not practical to utilize the existing right-of-way because of engineering problems that would be created by topography and the existing transportation infrastructure. A route map and an environmental impact assessment for the prime route were not included in the application, but TransCanada indicated that the final design would be available for evaluation by the first week of June. The consultant testified that, in his

opinion, there were no obstacles or environmental concerns along the loop and only the crossing of Wanogu Lake required refinement.

Concerns were expressed regarding TransCanada's practice of using triaryl phosphate lubricants at its compressor stations in Ontario and the possibility that these potentially toxic materials might be released to the environment through a spill, chronic venting or leaks into the pipeline itself. Based on information provided by the supplier, TransCanada stated that the lubricant presently used, Fyrquel 150 GT, was not a toxic compound. However, it was not known whether it might hydrolyse to form toxic compounds.

#### Views of the Board

The Board has carefully considered the environmental evidence of the Applicant and is satisfied that, in general, all the proposed facilities could be constructed and operated in an environmentally acceptable manner, given the implementation of effective mitigative measures.

However, with regard to the proposed Wanogu Lake loop, although the Board notes the opinion of the Applicant's consultant that there are no significant environmental obstacles to construction within the proposed corridor, the Board considers it necessary to obtain a detailed environmental impact assessment on the new right-of-way from MLV 74 + 12 km to MLV 75. Any certificate granted to TransCanada would contain a condition requiring the Applicant to file such a study prior to



commencement of construction of this loop and to satisfy the Board that any adverse environmental impacts could be mitigated.

The Board notes TransCanada's undertaking to implement the recommendations of its environmental consultants with respect to all of the proposed facilities and would expect the Applicant to incorporate the recommendations into its construction specifications and contracts. Should a certificate be granted, the Board would require the Applicant, after completion of construction, to submit a report describing the impact of construction on the environment and assessing the effectiveness of the Company's policies, practices and procedures in preventing or mitigating adverse environmental effects.

With respect to the impact of the pipeline on agricultural land, the Board is satisfied with the environmental consultant's recommendations and considers that implementation of these recommendations, in addition to the Applicant's standard construction practices for crossing agricultural land, should be adequate to minimize the impact on agricultural land.

In regard to post-construction monitoring, the Board would require the Applicant to monitor the condition of agricultural crops on lands disturbed by pipeline construction for two years following leave to open and to report to the Board the results of this monitoring prior to 1 November of the year in which the studies were done.

The Board notes that TransCanada is currently conducting studies to ascertain the impact on aquatic resources and downstream water users of removal of water required for hydrostatic testing. These studies should lead to the adoption of measures to ensure adequate protection of the waterbodies. The Board would require the Applicant to provide these studies and proposed mitigative measures for review and approval prior to commencement of hydrostatic testing.

The Board is aware that TransCanada has crossed most of the streams with previous pipeline loops and thus is familiar with the environmental concerns and the requirements for appropriate design, construction, restoration and mitigative procedures.

Concerning the impact on aquatic habitat and fish resources, the Board is satisfied that adequate protection of aquatic habitat and fish resources should be afforded by the Applicant's undertakings to construct across sensitive streams at a time not critical to fish or, if this is not possible, to employ appropriate mitigative measures.

TransCanada testified that an archaeological field survey team would investigate all sites on the proposed pipeline loops which had received a high or medium archaeological rating and TCPL would submit reports on these sites to the Board prior to construction.

The Board recognizes the concerns expressed by the Province of Ontario regarding the use of triaryl phosphate lubricants at TransCanada's compressor stations. The use of such toxic materials in the operation of pipeline systems is currently under investigation by the Board.

The Board notes the concerns expressed by Ontario in these proceedings with respect to all environmental matters affecting the Province. The Board also notes the request of Ontario that, should a certificate be granted to TransCanada for the facilities applied for in Ontario, the Province be given an opportunity to file with the Board written comments on the site-specific design material to be filed by TransCanada prior to consideration of this material by the Board.

The record indicates that TransCanada is prepared to consult with provincial personnel during the preparation of environmental studies and detailed design material. As Ontario stated in argument, working relations between TransCanada and the Province have been very good in the past. The Board would strongly encourage the continuation of this consultation and co-operation.

It is the view of the Board that the concerns of the Province can be adequately dealt with in an expeditious manner through close liaison with the Applicant during the design, construction and rehabilitation of areas crossed by the pipeline,



and through the involvement of Ontario and other interested parties in the public hearing process. Therefore, the Board does not consider it necessary to establish the procedure suggested by the Province of Ontario.

However, in view of the concerns expressed and in order to ensure that the Province of Ontario is apprised of the details of pipeline design and construction within the province, the Board would be prepared to require TransCanada to serve on the Ministry of Energy for the Province of Ontario copies of all site-specific environmental material. Any certificate issued to TransCanada with respect to facilities in Ontario would contain a condition to this effect.

CHAPTER 4

FUEL SAVING COMPRESSORS

To reduce the amount of fuel used on its system, TCPL applied to install five 21-MW compressor units at Stations 2, 5, 9, 17 and 30.

TransCanada testified that the compressor units applied for, with the exception of the 21-MW addition at Station 2, would also provide required capacity in sufficient time to meet the earliest date for additional exports. TCPL justified the additional unit at Station 2 solely on the basis of fuel savings.

The Applicant indicated that, in the event that imports were not approved by the United States authorities, the five 21-MW units could still be justified on the basis of fuel savings, calculated using the anticipated Alberta border price of gas sold in the domestic market. Thus, these five units should be installed even if all the recently authorized exports did not receive United States regulatory approval.

The reduction of fuel consumption by the addition of new compressor units would occur because of the higher fuel efficiency of the newer, larger gas turbines that power these units. Combined with a further 212 km of loop which TransCanada would propose to construct in 1981 or 1982 if all the recently authorized exports received the necessary United States

approvals, these five units would make possible the idling of some of the less efficient compressor units. The units idled in this manner would be maintained as back-up.

Intervenors were generally in support of the addition of these units, although IPAC presented an analysis which indicated that the fuel savings might be less than those calculated by TCPL.

TransCanada originally indicated that, for the export case, with the exception of the unit at Station 2 which would require a two-stage compressor, the new 21-MW units would be equipped with high-efficiency single-stage units with a compressor efficiency of about 85 percent. However, TransCanada later indicated that since the other four units would initially operate at high compression ratios, they would require two-stage compressors. Therefore, it would seem unlikely that the high, 85 percent compressor efficiency level could be attained. These compressors could not be converted to single-stage operation until the additional 212 km of loop were in place.

For the Western Section, TCPL has ordered three Cooper-Rolls Coberra-6256 and two Dresser Clark DJ-27 OG compressor units, which have fuel efficiencies of 33.3 percent and 34.5 percent at ISO conditions, respectively. TransCanada indicated that bottoming cycle equipment would be added to these units in about five years at a cost of approximately \$10 million each. The bottoming cycle equipment would increase the unit efficiencies to approximately 45 percent.



TCPL submitted a brief study which examined the alternative of increasing the thermodynamic efficiency of existing equipment by installing a waste heat recovery system. The study, which involved the addition of a combined cycle at Station 30 under the export case, indicated that the addition of this equipment could be economically justified over a 28-year period. TransCanada indicated that the delivery time for a combined cycle would be about 18 months, and, therefore, it would be too late for operation in 1980/81.

The estimates of fuel savings by TransCanada may be somewhat optimistic because the high compressor efficiency of the proposed units may not be attainable, and because TransCanada, in its calculation of fuel savings, assumed that its system would be operating at capability rather than at actual throughput. Notwithstanding this, the Board is of the view that the addition of the five compressors represents a reasonable choice considering alternatives, since with or without the exports, the economics of the proposed facilities are favourable. The Board is also satisfied that the cost estimates of TCPL are reasonable and that the facilities can be financed.

With respect to the compression equipment, it would appear that the Applicant has not chosen compressor sets with the highest Canadian content or highest fuel efficiency. The equipment chosen by TCPL did have a lower installation cost. The Board notes that TransCanada's choice was influenced by the

supplier's ability to meet timing requirements, and by TCPL's assessment of equipment performance and maintenance requirements. In the circumstances of this case, the Board accepts TransCanada's choice of compression equipment.

In the future, the Board expects TransCanada to conduct greater in-depth analyses of all the relevant considerations when selecting compression equipment, including analyses pertaining to fuel efficiency and the industrial benefits to Canada.

In regard to the economic viability of waste heat recovery systems as a fuel conservation measure, the Board will expect TransCanada to give due consideration to this option in future facilities applications.

CHAPTER 5

CANADIAN CONTENT

TransCanada estimated the Canadian content of its total capital expenditures to be 87 percent. TransCanada indicated that the Canadian content realized could be lower than that estimated because of concurrent demand by other pipeline projects and the inability of suppliers of such components as valves and fittings to meet timing requirements.

Should a certificate be granted, the Board would require TransCanada, within twelve months of leave to open being granted, unless upon application by TransCanada a later date were fixed by the Board, to submit a final summary report indicating:

- (i) in respect of each cost category in Schedules 2 and 3 of Section 8.2.3 of Exhibit 4, the Canadian content achieved in comparison with the Canadian content estimated, together with a statement explaining any significant variations; and
- (ii) in respect of the expenditures on line pipe, compression equipment, and valves and fittings, a statement setting forth the names of Canadian firms invited to make contractual bids and the names of firms to which contracts were awarded.



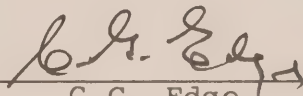


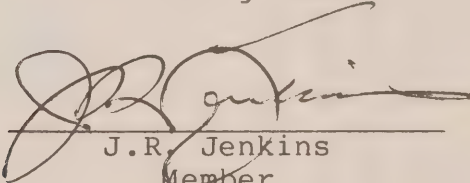
CHAPTER 6  
DISPOSITION

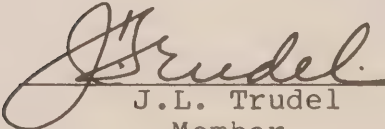
Having regard to the foregoing considerations, findings and conclusions, and having taken into account all matters that appear to it to be relevant, the Board is satisfied that the additional pipeline facilities applied for by TransCanada, namely the facilities to meet growth on the Montreal line, the pipeline facilities related to the recently authorized exports, and the fuel saving compressors, all as more particularly described in the application, are and will be required by the present and future public convenience and necessity.

Therefore, the Board is prepared to issue a certificate of public convenience and necessity in respect of these facilities, upon the terms and conditions set out in Appendix 2, subject to the approval of the Governor in Council.

All of which is respectfully submitted.

  
C.G. Edge  
Presiding Member

  
J.R. Jenkins  
Member

  
J.L. Trudel  
Member





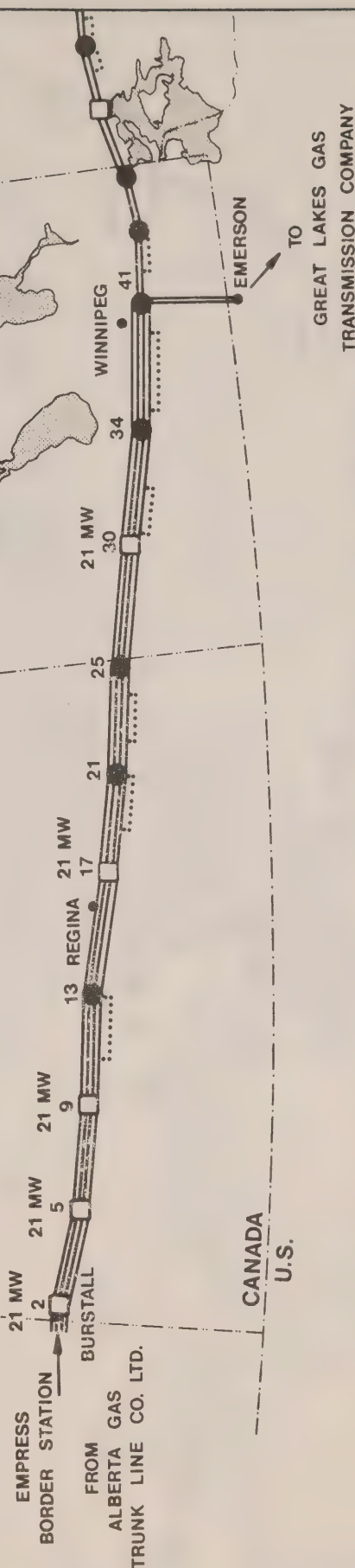
# PROPOSED 1980-81 ADDITIONS TRANSCANADA PIPELINES LIMITED WESTERN SECTION

ALBERTA

SASKATCHEWAN

MANITOBA

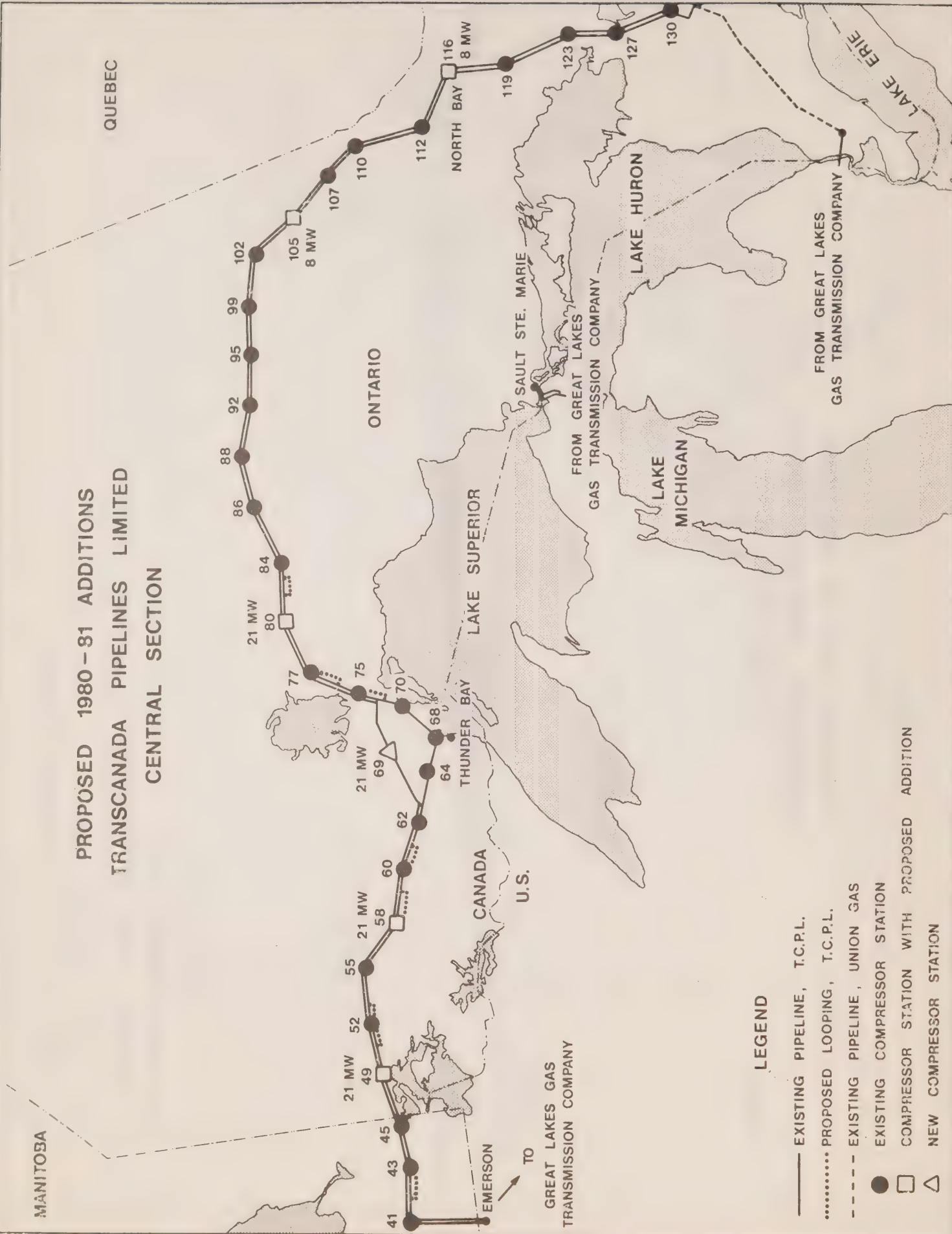
ONTARIO



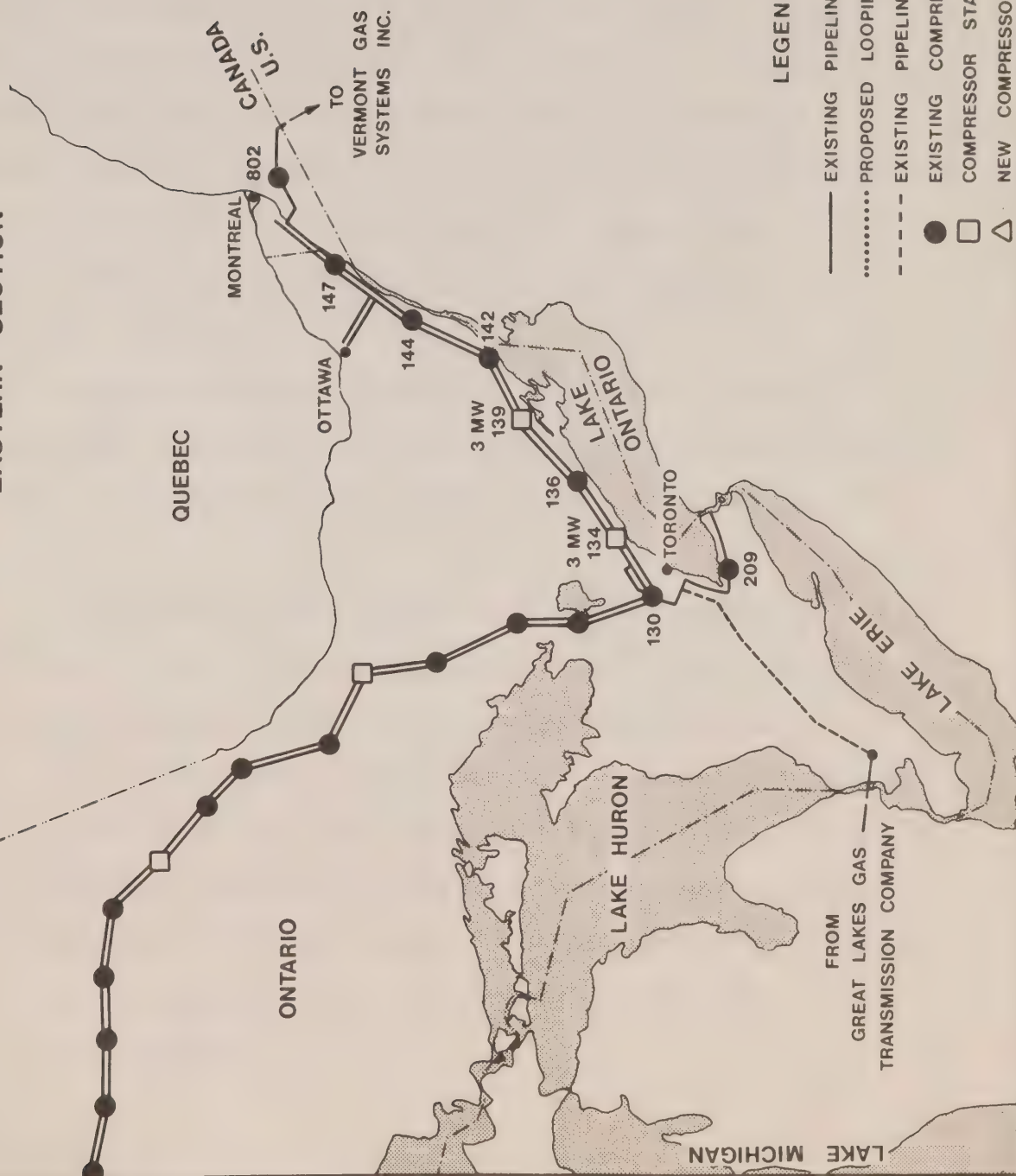
## LEGEND

- EXISTING PIPELINE, T.C.P.L.
- ..... PROPOSED LOOPING, T.C.P.L.
- - - EXISTING PIPELINE, UNION GAS
- EXISTING COMPRESSOR STATION
- COMPRESSOR STATION WITH PROPOSED ADDITION
- △ NEW COMPRESSOR STATION

PROPOSED 1980-81 ADDITIONS  
TRANSCANADA PIPELINES LIMITED  
CENTRAL SECTION



# PROPOSED 1980-81 ADDITIONS TRANSCANADA PIPELINES LIMITED EASTERN SECTION







TERMS AND CONDITIONS

1. The additional pipeline facilities to be constructed pursuant to this certificate shall be the property of and shall be operated by TransCanada.

2. (1) TransCanada shall cause the additional pipeline facilities, in respect of which this certificate is issued, to be designed, manufactured, located, constructed and installed in accordance with those specifications, drawings and other information or data set forth in the application, or as otherwise adduced in evidence, except as otherwise ordered, directed or approved by the Board, unless varied in accordance with subcondition (2) hereof.

(2) TransCanada shall cause no variation to be made in the specifications, drawings, or other design data and requirements described in subcondition (1) hereof without prior approval of the Board.

3. TransCanada shall, prior to the commencement of the construction of the additional pipeline facilities, submit for approval reports containing the following information:

- (i) an environmental impact assessment for that section of the Wanogu Lake loop (MLV 74 + 12 km to MLV 75) which deviates from the existing pipeline right-of-way, together with the measures and procedures recommended to mitigate any adverse effects of pipeline construction;

- (ii) detailed design drawings, pipeline construction procedures, and crossing schedules for the 17 stream crossings identified as sensitive by TransCanada's environmental consultant;
- (iii) an evaluation of those water sources to be used for hydrostatic testing where water removal may result in downstream shortages or adverse environmental effects at the time of testing, indicating any locations where alternative sources may be required because of a shortage of water; and
- (iv) the detailed measures TransCanada proposes to implement to ensure that the contractors and their employees are fully cognizant of the environmental concerns and of the environmental procedures to be followed along the proposed pipeline route.

TransCanada shall not commence construction until the Board has communicated its satisfaction on these matters.

4. TransCanada shall, unless otherwise authorized or ordered by the Board, implement or cause to be implemented all the policies, practices, recommendations and procedures for the protection of farmlands and the environment which are included in TransCanada's environmental reports, its Construction Specifications, its Environmental Protection Practices Handbook, 1979, or as otherwise adduced in evidence before the Board, and



shall cause no changes to be made to the said policies, practices and procedures without the prior approval of the Board.

5. TransCanada shall, within six months of leave to open being granted, unless upon application by TransCanada a later date is fixed by the Board, submit a report satisfactory to the Board describing the implementation of the policies, practices, recommendations and procedures referred to in Clause (i) of Condition 3 and in Condition 4. This report shall include:

- (i) details of any deviation, and
- (ii) an assessment of the effectiveness of the said policies, practices, recommendations and procedures.

6. TransCanada shall, concurrent with the filing thereof with the Board, serve on the Ministry of Energy for the Province of Ontario, copies of all site-specific environmental material in respect of facilities to be constructed in the Province of Ontario.

7. TransCanada shall, prior to the commencement of hydrostatic testing of the additional pipeline, submit for approval a list of water withdrawal and discharge sites, identifying the locations of municipal, industrial and domestic water intakes that could be affected, and describing the measures proposed to ensure that no damage is done to aquatic habitat, fish resources, or water users downstream.

8. TransCanada shall conduct a noise level survey at each compressor station at which new units will be installed during the first year of operation under winter conditions and with the compressor station operating at normal load, and shall submit the results of these surveys to the Board to establish that noise emission does not exceed the level of 52 dBA at 100 metres and, in the case of Stations 134 and 139, 48 dBA at 70 metres.

9. TransCanada shall, both during and after the construction period, monitor the effects of the construction of the additional pipeline facilities upon farmlands and the environment and shall submit reports satisfactory to the Board describing such effects. These reports shall be filed

- (i) within one year of the date of leave to open being granted, and

- (ii) prior to 1 November following the second complete agricultural growing season after leave to open has been granted,

unless, upon application by TransCanada, later dates are fixed by the Board. These reports shall include a description of the effects noted during the monitoring programs and of the actions taken or which will be taken to prevent or mitigate any long-term effects of construction upon farmlands and the environment.

10. TransCanada shall file with the Board, concurrent with the filing of plans, profiles and books of reference for new right-of-way, the locations of any mining claims along the proposed route.

11. TransCanada shall, prior to commencement of construction, submit to the Board for approval final specifications for line-pipe and pipeline components, together with supporting fracture control analysis.

12. TransCanada shall, prior to the commencement of construction, submit to the Board for approval welding procedures and final specifications for pipe coating, as well as a list of standards and company engineering specifications proposed to be used on this project.

13. TransCanada shall not commence installation of the compressor unit at Station 139 until TransCanada has filed with the Board a copy of an executed contract with Gaz Métropolitain, inc. for delivery of at least  $550 \times 10^3 \text{ m}^3$  per day of additional Contract Demand service at rates approved by the Board.

14. TransCanada shall, prior to commencement of construction of the approximately 475 kilometres of pipeline loop in the Provinces of Saskatchewan, Manitoba and Ontario and the installation of the six compressor units at Stations 49, 58, 69, 80, 105 and 116 in the Province of Ontario, demonstrate to the Board that all regulatory approvals, on terms satisfactory to the Board, have been obtained for the importation of the total



volumes authorized by the Board for export to the United States pursuant to Licence No. GL-55 issued to Niagara Gas Transmission Limited, Licence No. GL-56 issued to ProGas Limited, Licence No. GL-57 issued to Sulpetro Limited, and Licence No. GL-61 issued to Consolidated Natural Gas Limited.

15. TransCanada shall cause the construction and installation of the additional pipeline facilities to be completed on or before the following dates, unless, upon application by TransCanada, later dates are fixed by the Board:

- (i) the approximately 475 kilometres of pipeline loop in the Provinces of Saskatchewan, Manitoba and Ontario, and the compressor unit additions at Stations 49, 58, 69, 80, 105 and 116, by 30 November 1981;
- (ii) the compressor unit additions at Stations 2, 5, 9, 17, 30, 134 and 139, by 30 April 1981.





